BEFORE

THE PUBLIC SERVICE COMMISSION OF

SOUTH CAROLINA

DOCKET NO. 2021-3-E

Annual Review of Base Rates for Fuel Costs of Duke Energy Carolinas, LLC (For Potential Increase or Decrease in Fuel Adjustment and Gas Adjustment)	))))))	**PARTIAL PROPOSED ORDER OF THE SOUTH CAROLINA COASTAL CONSERVATION LEAGUE AND SOUTHERN ALLIANCE FOR CLEAN ENERGY**

COME NOW Intervenors the South Carolina Coastal Conservation League ("CCL") and Southern Alliance for Clean Energy ("SACE"), pursuant to oral instructions from the Vice Chair of the Commission at the conclusion of the Hearing on September 14, 2021, hereby file this Partial Proposed Order.

I. INTRODUCTION

This matter comes before the Public Service Commission of South Carolina ("Commission") on the annual review of the fuel purchasing practices and policies of Duke Energy Carolinas ("DEC" or "Company") and for a determination as to whether any adjustment in the fuel cost recovery factors is necessary and reasonable. The procedure followed by the Commission in this proceeding is set forth in S.C. Code Ann. § 58-27-865 (2015).

Pursuant to South Carolina law, utilities may recover only those fuel costs that they made "every reasonable effort to minimize… giving due regard to reliability of service, economical generation mix, generating experience of comparable facilities, and minimization of the total cost of providing service." S.C. Code Ann. § 58-27-865(F). Accordingly, a utility may recover only those fuel costs, including those associated with coal generation, that are incurred with justification.

For the reasons set out in this order, the Commission finds that DEC is entitled to recovery of its requested costs in this proceeding, while recognizing the importance of monitoring the cost of coal generation in future fuel cost proceedings.

A. Notice and Intervention

By letter dated March 22, 2021, the Clerk's Office of the Commission instructed the Company to publish a Notice of Hearing and Prefile Testimony Deadlines ("Notice") in newspapers of general circulation in the area affected by the Commission's annual review of the Company's fuel purchasing practices and policies by May 21, 2021. The letter also instructed the Company to furnish the Notice to its customers by U.S. Mail via bill inserts, or by electronic mail to customers who have agreed to receive notice by electronic mail, by May 21, 2021. The Notice indicated the nature of the proceeding and advised all interested parties desiring participation in the scheduled proceeding of the manner and time in which to file appropriate pleadings. On June 15, 2021, the Company filed with the Commission affidavits demonstrating that the Notice was duly published in newspapers of general circulation in accordance with the instructions set forth in the Clerk's Office's March 22, 2021 letter. On June 15, 2021, the Company filed with the Commission an affidavit demonstrating that the Notice was appropriately furnished to each affected customer.

Petitions to Intervene were received from the South Carolina Energy Users Committee ("SCEUC") and the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy ("CCL/SACE"). Pursuant to S.C. Code Ann. § 37-6-604(C) (2015 & Supp. 2019), the South Carolina Department of Consumer Affairs ("Consumer Affairs") was provided notice of this Docket which could impact consumers' utility rates but did not intervene. The Petitions to Intervene of SCEUC and CCL/SACE were not opposed by DEC, and no other parties sought to intervene in this proceeding. The South Carolina Office of Regulatory Staff ("ORS") is automatically a party pursuant to S.C. Code Ann. § 58-4-10(B).

II. STATUTORY STANDARDS AND REQUIRED FINDINGS

S.C. Code Ann. § 58-27-865(B) (2015) states in pertinent part that, "[u]pon conducting public hearings in accordance with law, the [C]ommission shall direct each company to place in effect in its base rate an amount designed to recover, during the succeeding twelve months, the fuel costs determined by the [C]ommission to be appropriate for that period, adjusted for the over-recovery or under-recovery from the preceding twelve-month period."

S.C. Code Ann. § 58-27-865(F) further directs the Commission to

> disallow recovery of any fuel costs that it finds without just cause to be the result of failure of the utility to make every reasonable effort to minimize fuel costs or any decision of the utility resulting in unreasonable fuel costs, giving due regard to reliability of service, economical generation mix, generating experience of comparable facilities, and minimization of the total cost of providing service.

Thus, should a utility fail to make every reasonable effort to minimize fuel costs, the Commission may order a disallowance, preventing the utility from recovering unreasonably incurred costs. *See Hamm v. S.C. Pub. Serv. Comm'n*, 291 S.C. 119, 122–23(1987) ("If the utility has acted unreasonably, and higher fuel costs are incurred as a result, the utility should not be permitted to pass along the higher fuel costs to its customers. [] The rule does not require the utility to show that its conduct was free from human error; rather, it must show it took reasonable steps to safeguard against error." (internal citations omitted)).

III. <u>HEARING</u>

The Commission convened a virtual hearing on this matter on September 13 and 14, 2021, with the Honorable Justin T. Williams, Chairman, presiding. DEC was represented by Samuel J. Wellborn, Esquire, and Katie M. Brown, Esquire. SCEUC was represented by Scott Elliott, Esquire. CCL and SACE were represented by Kate Mixson, Esquire, and Emma Clancy, Esquire. ORS was represented by Andrew M. Bateman, Esquire, and Christopher M. Huber, Esquire.

At the virtual hearing, DEC presented the direct testimony of Brett Phipps, Bryan L. Sykes, Jason D. Martin, Kenneth D. Church, Steven D. Capps, and Bryan P. Walsh, and the rebuttal testimony of Bryan L. Sykes and John Swez. CCL/SACE presented the direct and surrebuttal testimony of Devi Glick. ORS presented the direct testimony of O'Neil O. Morgan, Anthony D. Briseno, Anthony M. Sandonato, and Brandon S. Bickley. SCEUC did not present witnesses at the hearing. DEC witnesses Phipps, Church, Capps, and Walsh, and Swez were each qualified as expert witnesses before the Commission. Chairman Williams also qualified CCL/SACE Witness Glick as an expert witness in unit commitment practices, plant economics, and utility resource planning.

IV. FINDINGS OF FACT

1. The Commission finds that the costly and inflexible nature of coal resources generally, and the high cost of DEC's coal plants in particular, may present unique challenges that could increase costs to ratepayers. Accordingly, uneconomic coal commitment and dispatch should be closely monitored by the Company and evaluated in future fuel cost proceedings.

2. Those challenges associated with coal unit commitment and dispatch, in combination with high cost of DEC's coal plants relative to other coal plants in the country, suggest that uneconomic coal commitment and dispatch should be closely monitored by the Company and evaluated in future fuel cost proceedings.

3. The stipulation entered into by DEC and CCL/SACE, as memorialized in a letter filed in this docket on September 23, 2021, is reasonable and appropriately calculated to facilitate the productive exchange of information regarding coal unit commitment and dispatch in future fuel dockets.

V. EVIDENCE AND COMMISSION CONCLUSIONS

A. Unit Commitment and Dispatch of Coal Resources

Summary of Evidence

The evidence in support of these findings of fact is found in the testimony and exhibits in this Docket and the entire record in this proceeding.

CCL/SACE Witness Devi Glick presented testimony regarding the Company's coal unit commitment and dispatch practices. "Unit commitment" refers to a utility's decision to turn on, keep on, or turn off a coal-fired power plant, while the term "dispatch" refers to a utility's decision to turn up or down a unit between its minimum and maximum levels. (Tr. at 141:10-14). The process of unit commitment requires operators to look ahead to determine if a unit is likely to operate economically over the next few days, with the goal of ensuring customers are served by the lowest cost resources while maintaining reliability. (Tr. at 142:1-6). In a non-centralized market, as is the case with DEC, utilities generally rely on internal processes that project the marginal production cost to operate each unit to make this determination. (Tr. at 142:6-10). Ideally, resources are committed based on marginal cost, with the lowest-cost resources coming online first, and progressively more expensive units being turned on until system load is met. (Tr. at 142:10-13). The last unit needed to meet system load sets the system marginal cost, called "system lambda." (Tr. at 142:13-15).

Witness Glick explained when units are committed "uneconomically," the operator has decided to operate that unit even though its marginal costs of production are projected to be higher than the system lambda; units operated without regard to cost are also said to be committed "out of merit" order. (Tr. at 142:16-25). Ratepayers will incur the fuel and variable costs associated with uneconomic operation, even if there are lower cost options available. (Tr. at 142:25–143:3). Witness Glick recognized limited circumstances when uneconomic operation may be warranted, most notably to provide electricity during a high demand or peak hour. (Tr. at 143:6-13). Additionally, she noted that it is reasonable to expect that commitment decisions may be uneconomic if system demand or the availability of resources differs significantly from what the utility projected; though, of course, a utility should modify its decision-making processes if its forecasts frequently result in high costs. (Tr. at 147.15:6-16). In contrast, Witness Glick testified that uneconomic commitment is not justified when utilities ignore or underrepresent costs in the unit commitment process. For example, utilities regularly force coal units to stay online in order to avoid unit cycling which generally results in unnecessary operational costs well in excess of the cycling costs being avoided. (Tr. at 143:16-23). Additionally, utilities may underrepresent certain costs associated with coal units in the unit commitment and dispatch process by designating them as fixed rather than variable. (Tr. at 144:2-11). Lastly, some utilities may be incentivized to commit uneconomic units to show that aging units in their rate base are still "used and useful"; coal units that move to very low utilizations are often retired shortly thereafter because the justification for their operational costs evaporates. (Tr. at 144:12-19).

Witness Glick explained that, though utilities have in the past operated their coal-fired plants as baseload resources without having to think about whether to turn the plant on or off on a regular basis, in recent years low gas prices and nearly zero-variable cost renewables have pushed coal generation to become marginal and uncompetitive during many hours of the year. (Tr. at 141:15-21, 180:4-13). This trend is largely due to the "inflexibility of coal units," meaning that "coal units simply take a while to turn on, to turn off, to ramp up, and to ramp down. So when there is a change in system needs of a change in load…[t]hey can't be turned on and off very quickly." (Tr. at 174:7-12). As a result, "there has to be more planning, more time, and there are more costs incurred in order to turn them on, turn them off, change and respond to different system conditions." (Tr. at 174:13-15). These operational challenges cause utilities to incur greater costs than if they had instead relied on more "nimble" resources that are more easily committed and dispatched, such as gas resources, battery storage, and paired renewables. (Tr. at 174:16-17, 184:17-25). Based on Energy Information Administration ("EIA") data, Witness Glick determined that DEC's four coal units ranked in the top 75th – 90th percentile for most expensive fuel costs in 2020 among all United States coal-fired power plants. (Tr. at 187:21–188:21).

DEC Witnesses Phipps, Sykes, and Swez submitted responsive testimony on the subject of the Company's unit commitment and dispatch process. Witness Sykes noted at the hearing that economic dispatch is one "mitigation strategy [available to the Company] to try to take advantage of a fuel resource that's cheaper" and Witness Phipps described some of the hurdles the Company faced in acquiring cost-effective coal transportation. (Tr. at 62–65, 125:9-21). In rebuttal testimony and at the hearing, Witness Swez highlighted several key considerations in the Company's commitment and dispatch process, noting among other challenges, that the Company must maintain 1770 MW of operating reserves in its unit commitment plan. (Tr. at 328:10-16). Witness Swez additionally testified that the Company makes "a couple different types of commitment decisions," including the "larger" decisions relating to "large coal units" and other "commitment decisions around individual combustion turbines and [] pumped storage generation." (Tr. at 351:1-7).

Witness Swez testified that the Company reviews the prudency of its commitment and dispatch decisions on a weekly basis. (Tr. at 351:8-18). However, he stated that the Company does not typically do this analysis for coal units because the capacity of those units is so much greater and the units are therefore less likely to be committed in error; in other words "with the CTs, because there are more maybe options for what you would ramp up and ramp down, there's more to be learned from that." (Tr. at 351:19-352:15).

With respect to coal resources generally, Witness Swez stated that Witness Glick's cost comparison of DEC coal plants with other plants in the country was not valid due to "differences in location, types of coal, [and] technologies." (Tr. at 336:1-8). Witness Swez testified, for example, that the units with the lowest coal costs are all located in or near the coal producing regions in the state of Wyoming. (Tr. at 331.18:11-14). However, Witness Swez did not dispute the "costs as reported." (Tr. at 336:12-24). Witness Swez also agreed that being economical means considering and taking advantage of the most cost-effective resources at your disposal within reliability constraints. (Tr. at 336:25–337:4).

In surrebuttal and at the hearing, Witness Glick continued to emphasize that coal units are costly and inflexible resources. First, Witness Glick testified that if coal is more expensive in DEC territory that it is in most of the country, as demonstrated through her EIA cost comparison, the Company should move on to other resources as quickly as possible, "regardless of the reasons why that cost is really high." (Tr. at 192:25–193:13). In response to Witness Swez's reliability concerns, Witness Glick recognized the Company's need to ensure adequate operating reserves and reliable service but observed that there are "smaller and nimbler [technological] solutions" than "turning on or keeping on a large coal plant" available to meet reliability needs. (Tr. at 152:4-6, 169:15-24).

Additionally, Witness Glick testified that while she did not analyze the specific resources that "would be required in order to make…a reliable system for Duke," she did not believe that coal should be part of that system. (Tr. at 182:23-183:1). Witness Glick clarified that she was not advocating for DEC to shut down each of its coal plants but that, given the "the high fuel costs and the inflexibility [of coal]… understanding a timeline for retiring and replacing these units is in the best interests of ratepayers because it will incur lower fuel costs and allow customers to have basically lower fuel costs from more nimble and less costly resources." (Tr. at 178:6-18).

Lastly, Witness Glick noted the connection between uneconomic coal commitment and utility resource adequacy planning. She explained that uneconomic coal commitment and dispatch, "by keeping [the] plant on-line and operating even when it is not the least-cost resource," has the tendency to make high-cost units look more useful and reduces the likelihood that high-cost coal will be replaced with less expensive and more flexible resources; this practice will impact ratepayers in future fuel proceedings and misrepresent resource needs in the utility's long-term planning. (Tr. at 152:16-24, 182:6-13). Witness Glick noted that the impact on resource planning from unit commitment and dispatch practices tends to be overlooked because the "really deep dive into [unit commitment] data doesn't really tend to happen very much in resource planning processes." (Tr. at 180:14–181:1). At the hearing, in response to Commissioner Caston's question about coal retirement studies, Witness Glick testified that the "main things to be evaluated are the cost of alternatives and the availability of alternatives, any transmission constraints or local reliability issues…So it's comparing the forward-going costs of the coal plant to the costs to build and operate new resources." (Tr. at 183:13–184:8).

Witness Glick initially recommended a disallowance of $3.8 million based on a backwards-looking cost analysis of DEC's unit commitment decisions; in rebuttal testimony, Witness Swez noted that using backwards-looking data was inappropriate, and that DEC had provided CCL/SACE with the forward-looking cost data the Company uses to commit and dispatch resources. (Tr. at 146:14-17, 339:1-16, 340:18–341:21). At the hearing, Witness Glick stated she did not believe the Company had provided forward-looking cost data in its discovery responses; CCL/SACE counsel later clarified that DEC had provided forward-looking cost data in discovery but noted that some additional data would be required to conduct a thorough analysis of whether the Company was operating its coal plants economically. (Tr. at 150:21-151:4, 167:22-168:9).

On September 23, DEC and CCL/SACE submitted a letter detailing the terms of a stipulation reached following the hearing. CCL/SACE withdrew its previous recommendation that the Commission disallow recovery of $3.8 million in fuel costs in this proceeding, and DEC agreed to provide certain additional information regarding the cost and load data underlying its unit commitment decisions in future fuel proceedings.

Commission Conclusions

The Commission finds that the costly and inflexible nature of coal resources presents unique challenges that may increase costs to ratepayers. More flexible resources such as gas resources, battery storage and paired renewables, will give the Company increased control over its operations and facilitate economic unit commitment and dispatch. In addition to the challenges associated with coal unit commitment and dispatch, the high cost of DEC's coal plants relative to other coal plants in the country suggests that fuel costs associated with coal resources should be closely monitored by the Company and evaluated in future fuel cost proceedings. While CCL/SACE have withdrawn their initial recommendation of a disallowance, the Commission finds that uneconomic coal commitment and dispatch is an important issue to consider in fuel cost proceedings, given its potential to impact ratepayers in the near-term, as well as through longer-term resource planning. Consequently, the Commission finds that the stipulation reached by CCL/SACE and DEC is reasonable and additional data regarding the Company's unit commitment decisions will assist parties and the Commission in reviewing the Company's practices in future proceedings.

VI. ORDERING PARAGRAPHS

NOW, THEREFORE, IT IS HEREBY ORDERED THAT:

1. The joint agreement between DEC and CCL/SACE is incorporated into this Order by reference, is attached as Order Exhibit 1, and is found to be a reasonable resolution of certain issues in this case and to be in the public interest; it is hereby adopted and approved.

2. The Commission recognizes that uneconomic coal commitment and dispatch is an important issue to consider in future fuel dockets; the data DEC has agreed to provide in future fuel cost proceedings under the joint agreement will help to inform the Commission and intervenors on the Company's unit commitment and dispatch practices. The Company shall continue to examine and make adjustments as necessary to its unit commitment and dispatch practices in light of the high costs associated with its coal plants and the inflexible nature of coal resources.

BY ORDER OF THE COMMISSION:

Justin T. Williams, Chairman
Public Service Commission of
South Carolina

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September 23, 2021

VIA ELECTRONIC FILING
The Honorable Jocelyn G. Boyd
Chief Clerk/Executive Director
Public Service Commission of South Carolina
101 Executive Center Drive, Suite 100
Columbia, SC 29210

Re: **Annual Review of Base Rates for Fuel Costs of Duke Energy Carolinas, LLC, Increasing Residential and Non-Residential Rates**
Docket Number: 2021-3-E

Dear Ms. Boyd:

Duke Energy Carolinas, LLC ("DEC" or the "Company") and the Southern Alliance for Clean Energy and the South Carolina Coastal Conservation League ("SACE/CCL") are filing this joint letter to advise the Public Service Commission of South Carolina (the "Commission") of an agreement reached between them in connection with the above-referenced docket. Specifically, DEC and SACE/CCL have agreed to the following:

- SACE/CCL withdraw their $3.8 million disallowance recommendation in this docket.
- DEC will provide the following information in its native format in future South Carolina annual fuel proceedings upon the submission of a data request from SACE/CCL:
  - Excel spreadsheets showing the unit cost data that the Company sees at the time it makes its unit commitment decisions (projected unit costs). These spreadsheets include all Duke-operated resources available to serve load.
  - Documents containing the Company's Seven Day Forecast reports that show how the Company planned to operate each unit (output for each unit).
  - Total load projected to be served in each hour, expressed in MWs, and the required MWs of operating reserves required in each hour.

By copy of this letter, I am serving all parties of record via electronic mail.

Sincerely,

Katie M Brown

Katie M. Brown

Counsel for Duke Energy Carolinas, LLC

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cc: Parties of record